IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant: Willie W. Ng	) On Appeal to the
	) Board of Appeals
Patent Application No.: 10/766,103	)
	) Group Art Unit: 2828
Filed: 01/27/2004	)
	) Examiner: Van Roy, Tod
	)
For: " A Wavelength Reconfigurable Laser…"	) Date: August 18, 2008
	)

BRIEF ON APPEAL

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is an appeal from the Final Rejection (or Final Action), dated March 17, 2008, for the above identified patent application. A Notice of Appeal was filed on June 17, 2008. Appellants submit that this Appeal Brief is timely filed on Monday, August 18, 2008. Please charge the Appeal Brief fee of $510.00 to deposit account no. 12-0415.

REAL PARTY IN INTEREST

The real party in interest to the present application is HRL Laboratories, LLC of Malibu, California.

RELATED APPEALS AND INTERFERENCES

Appellants submit that there are no other prior and pending appeals, interferences or judicial proceedings which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS

Claims 1, 3-17 and 19-39 are present in the application. Claims 24, 25, 27, 28 and 30 have been identified as being allowable. Therefore only claims 1, 3-17, 19-23, 26, 29 and 31-39 are are the subject of this Appeal and are reproduced in the accompanying Claims appendix.

STATUS OF AMENDMENTS

No claim amendments have been offered in response to the Final Rejection.

SUMMARY OF CLAIMED SUBJECT MATTER

The invention described and claimed in the present application relates to a wavelength reconfigurable laser transmitter tuned via the resonance passbands of a tunable microresonator. (Claim 1; Abstract).

Claim 1 recites a reconfigurable laser transmitter comprising: an integration platform (30; Figs. 5, 7, 8, 10a, and 10b; p. 9. l. 11 - p 11, l. 20) having a silicon substrate (p. 9, ll. 13-14); a gain element (20; Figs. 3, 5, 6, and 9; p. 8, l. 10 - p. 15, l. 5) having an optical output, the gain element having a body of material different than said integration platform (p. 9, ll. 10-20), being disposed on said integration platform; a first optical path (101; Figs. 3, 5, 7-10b; p. 8, l. 10 - p. 12, l. 6) receiving optical output from said gain element, said first optical path comprising a silica waveguide within said integration platform (101; Figs. 8, 10a, and 10b; p. 9, ll. 14-15, p. 10, l. 6 - p. 12, l. 6); a tunable microresonator (50, 50a, 50b; Figs. 3, 5, 7-10b; p. 8, l. 10 - p. 12, l. 6) optically coupled with said first optical path, said tunable microresonator having a body of material different than said silica waveguide (p. 9, l. 10 - p. 10, l. 7) and being disposed on said integration platform (p. 9, l. 10 - p. 11, l. 20); a second optical path (102; Figs. 3, 5, 7-10b; p. 8, l. 10 - p. 12, l. 6) coupled with said tunable microresonator, said second optical path comprising a silica waveguide within said integration platform (102; Figs. 8, 10a, and 10b; p. 9, l. 27 - p. 12, l. 6); and a fixed grating (40; Figs. 3, 5, 9; p. 8. l. 11 - p 16, l. 20) in said integration platform and coupled with said second optical path.

Claim 10 recites a method for reconfiguring a wavelength of a laser comprising the steps of: providing an integration platform formed of silicon (30; Figs. 5, 7, 8, 10a, and 10b; p. 9. l. 11 - p 11, l. 20); coupling a tunable microresonator (50, 50a, 50b; Figs. 3, 5, 7-10b; p. 8, l. 10 - p. 12, l. 6) having a passband to a fixed grating (40; Figs. 3, 5, 9; p. 8. l. 11 - p 16, l. 20) having a plurality of reflection peaks via a silica waveguide (101; Figs. 3, 5, 7-10b; p. 8, l. 10 - p. 12, l. 6) in said integration platform, said silica waveguide including a UV-induced sampled grating (p. 15, ll. 6-7); heterogeneously mounting the tunable microresonator on said integration platform, said tunable microresonator being formed of a material different than the silica waveguide (p. 9, l. 29 - p. 10, l. 7); and tuning said tunable microresonator such that the passband of said tunable microresonator is aligned with one of said plurality of reflection peaks of said fixed grating (p. 8, ll. 26-31).

Claim 17 recites a method of configuring a transmitter to transmit one of a plurality of wavelengths, said method comprising the steps of: passing a spectrum of light from a gain element (20; Figs. 3, 5, 6, and 9; p. 8, l. 10 - p. 15, l. 5) into a tunable Fabry-Perot etalon (50b; Figs. 9-10b) or microdisk (50a: Figs 5 and 7-8) microresonator (50, 50a, 50b; Figs. 3, 5, 7-10b; p. 8, l. 10 - p. 12, l. 6); selecting a first portion of said spectrum of light to be transmitted by said transmitter (p. 8, l. 26 - p. 9, l. 8); and electrically tuning said tunable Fabry-Perot etalon or microdisk microresonator (p.12, l. 21 - p. 14, l. 15) wherein a second portion of said spectrum of light is to be transmitted by said transmitter to a sampled grating (40; Figs. 3, 5, 9; p. 8. l. 11 - p 16, l. 20) fabricated in a silica

waveguide (102; Figs. 3, 5, 7-10b; p. 8, l. 10 - p. 12, l. 6) for reflection back to said gain element.

Claim 29 recites a method of configuring a transmitter to transmit one of a plurality of wavelengths, said method comprising the steps of: passing a spectrum of light from a group III-V gain element (20; Figs. 3, 5, 6, and 9; p. 8, l. 10 - p. 15, l. 5) into a tunable group III-V Fabry-Perot etalon (50b; Figs. 9-10b; p. 11, l. 9 - p. 12, l. 6); selecting a first portion of said spectrum of light to be transmitted by said transmitter (p. 8, l. 26 - p. 9, l. 8); and electrically tuning said tunable Fabry-Perot etalon (p.12, l. 21 - p. 14, l. 15), wherein a second portion of said spectrum of light is to be transmitted by said transmitter to a sampled grating (40; Figs. 3, 5, 9; p. 8. l. 11 - p 16, l. 20) fabricated in a silica waveguide (102; Figs. 3, 5, 7-10b; p. 8, l. 10 - p. 12, l. 6) for reflection back to said gain element.

Claim 33 recites a method of configuring a transmitter to transmit one of a plurality of wavelengths, said method comprising the steps of: passing a spectrum of light from a gain element (20; Figs. 3, 5, 6, and 9; p. 8, l. 10 - p. 15, l. 5) into a tunable Fabry-Perot etalon (50b; Figs. 9-10b; p. 11, l. 9 - p. 12, l. 6); selecting a first portion of said spectrum of light to be transmitted by said transmitter (p. 8, l. 26 - p. 9, l. 8); and electrically tuning said tunable Fabry-Perot etalon (p.12, l. 21 - p. 14, l. 15), wherein a second portion of said spectrum of light is transmitted to a sampled grating (40; Figs. 3, 5, 9; p. 8. l. 11 - p 16, l. 20) fabricated in a silica waveguide (102; Figs. 3, 5, 7-10b; p. 8, l. 10 - p. 12, l. 6) for reflection back to said gain element.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Issue 1: Whether Claims 1, 5-10, 13-16, 29 and 31-39 are patentable under 35 U.S.C. 103(a) in view of Orenstein, US Patent 6,940,878 (hereinafter "Orenstein") in view of Yamada, US Patent 6,027,254 (hereinafter "Yamada")?

Issue 2: Whether Claims 3 and 11 are patentable under 35 U.S.C. 103(a) in view of Orenstein, US Patent 6,940,878 (hereinafter "Orenstein") in view of Yamada, US Patent 6,027,254 (hereinafter " Yamada") and in view of Soref, US Patent 6,195,187 (hereinafter "Soref")?

Issue 3: Whether Claims 17, 19-23, 26, 29 and 33 are patentable under 35 U.S.C. 103(a) in view of Orenstein, US Patent 6,940,878 (hereinafter "Orenstein") in view of Yamada, US Patent 6,027,254 (hereinafter " Yamada"), in view of Soref, US Patent 6,195,187 (hereinafter " Soref") and further in view of Tanaka US Patent 6,320,888 (hereinafter Tanaka")?

ARGUMENT

Whether Claims 1, 5-10, 13-16, 29 and 31-39 are patentable under 35 U.S.C. 103(a) in view of Orenstein, US Patent 6,940,878 (hereinafter "Orenstein") in view of Yamada, US Patent 6,027,254 (hereinafter "Yamada")?

On page 4 of the final Office Action of March 17, 2008, the Examiner rejects Claims 1, 5-10, 13-16, and 31-32 under 35 U.S.C. 103(a) as being obvious over Orenstein and Yamada. On page 9 of the final Office Action of March 17, 2008, the Examiner rejects claims 29 and 33 for the same reasons as claim 1 (and 17) and rejects claims 34-39 for the same reasons as claims 31-32. Appellant respectfully disagrees with these rejections.

<u>Claim 1: "ON" versus "WITHIN"</u>

On page 3 of the official action of August 16, 2007, the Examiner reads the recited "gain element" of claim 1 on Orenstein's waveguide (WG) laser and the Examiner reads the recited "first optical path" also on Orenstein's waveguide (WG) laser. As pointed out by the Applicant in a response dated December 17, 2007, claim 1 specifically recites, *inter alia*:

> a gain element, having an optical output, the gain element having a body of material different than said integration platform, being <u>disposed on said integration platform</u>; [and]
>
> a first optical path receiving optical output from said gain element, said first optical path comprising a silica waveguide <u>within said integration platform</u> … [emphasis added]

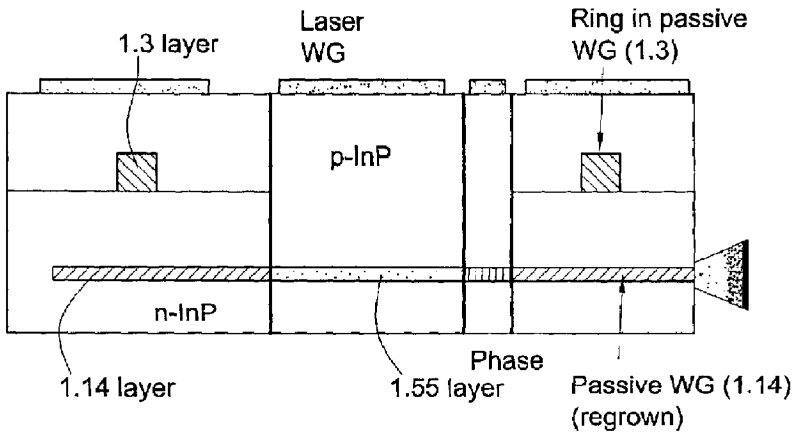
It is to be noted that the recited gain element of claim 1 is "<u>disposed on said integration platform</u>" while the recited first optical path receiving optical output from said gain element is "<u>within said integration platform</u>". This is fully supported by Applicant's disclosure where the gain element (20) is shown ON the integration platform while the first optical path (101) is described as WITHIN the integration platform.

In the Final Rejection of March 17, 2008, the Examiner addresses these distinctions by asserting:

> "The integration platform of Orenstein can be interpreted as being the substrate as well as the burying materials on top of the substrate and surrounding the waveguides. Therefor, the gain material is on the platform (substrate portion) while the waveguides are in the platform (buried portion)." (see page 2 of the Final Rejection).

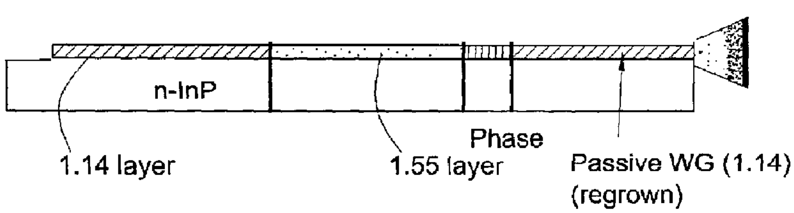
This assertion is simply not tenable. The Examiner, when interpreting Applicant's claims, must take positions which are consistent. The Examiner is not permitted to take the inconsistent positions that an element of claim 1 can be read on a particular prior art structure in a prior art reference in one part of claim 1 and then assert that the very same recited element may be read on a different structure in the same prior art reference when the limitation appears elsewhere in claim 1.

Consider what the Examiner is asserting in this case. For the purpose of asserting that the recited first optical path receiving optical output from said gain element is "within said integration platform" as claimed, the Examiner points to the full cross section of Fig 5D of Orenstein which is reproduced below:



The passive waveguide (WG) on the bottom of this figure is considered by the Examiner as meeting the second requirement of claim 1 noted above.

But when it comes to the first requirement of a "gain element, having an optical output, the gain element having a body of material different than said integration platform, being disposed on said integration platform" the Examiner essentially modifies Figure 5D of Orenstein by stripping off the layers above the passive WG layer, as shown in the modified version of Fig. 5D reproduced below:



The Examiner states that the Passive WG (waveguide) is **ON** the substrate when reading the gain element limitation of claim 1 on Orenstein, but then the Passive WG is **WITHIN** the substrate when reading the first optical path limitation of claim 1 on Orenstein.

The Examiner cannot have it both ways. He must stick to a single interpretation of this prior art reference when rejecting claim 1. Yamada does not address this deficiency of Orenstein. Oreinstein's WG (waveguide) is conceptually either on or within his substrate, but it is not in both places at the same time!

Additionally it must be noted that Orenstein shows only one embodiment with a Bragg grating plus a microring resonator. This is the embodiment of Fig. 3A. The other embodiments of Orenstein have no Bragg grating and two microring resonators (see Figs. 3B - 5E) or other structures such as those shown in Figs. 6 and beyond. The Examiner concedes that Orenstein appears to be most concerned with utilizing microrings <u>exclusively</u> [see Final Rejection, p. 3, next to last paragraph], but notes the existence of the embodiment of Fig. 3A of Orenstein were a grating is taught. The problem here is that the Examiner does not confine his analysis to the embodiment of Fig. 3A, but rather relies on the double microring embodiment of Fig. 5D to try to meet the language of the Claim 1, for example. But claim 1 requires a grating, so Fig. 5D is not really on point. The Examiner effectively assumes that Fig. 5D can somehow be modified to make it relevant to the claims in this application. Just what are those modifications and why are they justified? There must be some articulated reasoning with some rational underpinning to support the mixture of embodiments relied upon by them Examiner. Yet there is none. The Examiner just assumes that he can mix embodiments at will.

Claim 1 <u>also recites</u> that "said tunable microresonator" has "a body of material different than said silica waveguide and being disposed on said integration platform…" In Orenstein the tunable microresonator is INSIDE Orenstein's substrate, and not "on said integration platform" as claimed. See Fig. 5D of Orenstein. The Examiner's analysis does not bother to deal with this limitation!

The rejection of claim 1 and the rejected claims dependent thereon (claims 3-9 and 31-32) is improper since Orenstein does not teach that which the Examiner asserts it teaches relative to these claims. Orenstein simply does not meet the limitations of claim 1 and Yamada cited by the Examiner does not meet these missing limitations either!

<u>The improper obviousness rejection of claims 1, 5-10, 13-16, 29 and 31-39</u>

The rejection of claims 1, 5-10, 13-16, 29 and 31-39 is based on an asserted obviousness rejection based on Orenstein and Yamada. The Examiner's rationale for combining these two patent disclosures can be found on page 5 of the Final Rejection.

Of course, 35 U.S.C. § 103 "forbids issuance of a patent when 'the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.'" *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1734 (2007). The Court stated that obvious analysis "should be

made explicit." Id. at 1740-41, citing *In re Kahn*, 441 F.3d 977,988 (Fed. Cir. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness").

So let us look to the Examiner's "articulated reasoning with some rationale underpinning" for combining these two disclosures. The Examiner states in the final rejection that the reason for combining these two disclosures is "to allow for heat dissipation through the substrate". [Page 5 of the Final Rejection].

This is interesting as the Examiner seems to imagine some heat issue associated with Orenstein's disclosure that a person skilled in the art would be motivated to deal with. The applicant has previously challenged the Examiner to state for the record why a person skilled in the art would believe that Orenstein has a heat disposition problem which needs to be addressed. This the Examiner has declined to do. The Examiner instead chooses to rely on his conclusory statements in spite of the Supreme Court's requirements to the contrary.

Not only does the Examiner ignore the requirements of the Supreme Court, he also ignores that fact the Orenstein seems to suggest that there is no heat issue associated with his invention. Orenstein tells the reader twice that "a very small amount of power (current) is required." See Col. 3, ll. 59-63 and Col. 4, ll. 54-56 of Orenstein.

The Examiner also states that it would be obvious to use silicon for the substrate and waveguides since silica optical fibers are well know in the art. The Examiner overlooks the fact that Orensein's InP laser is buried in his InP

substrate. Why dispose an InP Laser on a silicon substrate? That just complicates the design for no reason. The Examiner also suggests that silicon is a "wide frequency waveguide material". Is this compared to Orenstein's InP? See Page 5 of the Final Rejection. Whatever this statement means, it is an off-hand factual assertion for which there is no factual support in the record. And it is the sort of conclusory analysis which the Supreme Court says Examiners should not be engaging in.

And also noted above, the Examiner mixes embodiments from Orenstein as if they were some unified single embodiment. This point has been discussed above in connection with the embodiments of Figs. 3A and 5D, but it bears mentioning again since this is another instance of the Examiner relying on some conclusory analysis as opposed to considering what the prior art really teaches.

Claim 10 - UV-induced sample grating limitation

Claim 10 is a method claim. It recites, *inter alia*, a "method for reconfiguring a wavelength of a laser comprising the steps of:providing an integration platform formed of silicon; [and] coupling a tunable microresonator having a passband to a fixed grating having a plurality of reflection peaks via a silica waveguide in said integration platform, said silica waveguide including a UV-induced sampled grating …"

The Examiner refuses to give patentable weight to the limitation "a UV-induced sampled grating" asserting that "these claims are product by process claims, where the process limitations are not limiting". [See page 6 of the Final rejection].

Since claim 10 is a method claim, not a product by process claim, full weight should be given the limitation of "a UV-induced sampled grating". Since the Examiner admits that claim 10 is not fully met by the asserted combination of Orenstein and Yamada (which is an invalid combination for the reasons already asserted above), the Examiner's rejection is legally insufficient. Applicant respectfully requests withdrawal of the Examiner's rejection of claim10.

<u>Claim 10 - other limitations not accounted for in the Examiner's Analysis</u>

Claim 10 also recites "coupling a tunable microresonator having a passband to a fixed grating having a plurality of reflection peaks via a silica waveguide in said integration platform" and "tuning said tunable microresonator such that the passband of said tunable microresonator is aligned with one of said plurality of reflection peaks of said fixed grating." The Examiner fails to show where Orenstein discloses "a tunable microresonator having a passband" or where Orenstein teaches "tuning said tunable microresonator such that the passband of said tunable microresonator is aligned with one of said plurality of reflection peaks of said fixed grating."

The Examiner tells the applicant that claim 10 is rejected for the very same reasons as claims 1 and 9 and then does not bother to deal with limitations, such as those discussed immediately above, found in claim 10, but which do not appear in either claims 1 or 9.

The Examiner cannot ignore limitations found in claims just because that makes it convenient for him to reject those claims. The Examination of this

application has been very improper. The rejections of claim 10, and claims 11 and 13-16 dependent thereon are improper based on the cited art.

Claims 29 and 31-39

The rejections of claims 29 and 31-39 are discussed above relative to the obviousness rejection.

Issue 2: Whether Claims 3 and 11 are patentable under 35 U.S.C. 103(a) in view of Orenstein, US Patent 6,940,878 (hereinafter "Orenstein") in view of Yamada, US Patent 6,027,254 (hereinafter " Yamada") and in view of Soref, US Patent 6,195,187 (hereinafter "Soref")?

This rejection can be found on page 7 of the Final Rejection. The Examiner cites col. 5, ll. 60-64 of Soref and asserts that based thereon it would be obvious to replace the microring of Orenstein with Soref's microdisk to "obtain a more favorable contact geometry."

Soref teaches the use of many dual microrings 6,8 wired in a cross connect switch configuration. These microrings are either on or off to selected frequencies. High control currents (200 Amperes per sq. cm) are discussed and Soref gets into a discussion of a better contact geometry due to these high currents in his cross bar switches.

However, it is to be recalled that Orenstein touts the fact that his device works at low power (low current). The justification for combining these references is merely conclusory; the Examiner intimates a person would be motivated by a desire for favorable contact geometry, yet provides no rationale of

why such a goal would exist or how such a goal leads to the combination of Soref's cross connect switch with Orenstein's low power tunable communications laser. Yes, Soref is concerned with favorable contact geometry, apparently due to his high current application, but Orenstein is not, he is working on a low current application. The Examiner has not made a prima facie case of obviousness. The applicant respectfully requests the rejection be overturned.

Issue 3: Whether Claims 17, 19-23, 26, 29 and 33 are patentable under 35 U.S.C. 103(a) in view of Orenstein, US Patent 6,940,878 (hereinafter "Orenstein") in view of Yamada, US Patent 6,027,254 (hereinafter " Yamada"), in view of Soref, US Patent 6,195,187 (hereinafter " Soref") and further in view of Tanaka US Patent 6,320,888 (hereinafter Tanaka")?

This rejection is discussed on page 7 of the final rejection. The Examiner cites Tanaka for its teaching of a silicon waveguide where the grating is written directly on the waveguide, the Examiner citing Fig. 1 of Tanaka.

While Tanaka teaches writing a grating on a waveguide using an excimer laser, that teaching does not overcome the issues noted above relative to the Examiner's stated rationale for combining Orenstein and Yamada. Orenstein and Yamada cannot be properly combined for the reasons already stated and adding either or both Soref and Tanaka to the mix do not address the basic deficiencies in the Examiner's logic in combining Orenstein and Yamada.

Conclusion

For the extensive reasons advanced above, Appellants respectfully contend that each rejected claim is patentable over the cited prior art. Therefore, reversal of all rejections is courteously solicited.

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The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to deposit account no. 12-0415. In particular, if this Appeal Brief is not timely filed, the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136(a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 12-0415.

Respectfully submitted,

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(Signature)

18 August 2008
(Date)

Encls:
Claims Appendix;
Evidence Appendix;
Related Proceedings Appendix.

1. A reconfigurable laser transmitter comprising:

an integration platform having a silicon substrate;

a gain element, having an optical output, the gain element having a body of material different than said integration platform, being disposed on said integration platform;

a first optical path receiving optical output from said gain element, said first optical path comprising a silica waveguide within said integration platform;

a tunable microresonator optically coupled with said first optical path, said tunable microresonator having a body of material different than said silica waveguide and being disposed on said integration platform;

a second optical path coupled with said tunable microresonator, said second optical path comprising a silica waveguide within said integration platform; and

a fixed grating in said integration platform and coupled with said second optical path.

2. Cancelled.
3. The reconfigurable laser transmitter of claim 1 wherein said tunable microresonator comprises a microdisk or a Fabry-Perot etalon.
4. The reconfigurable laser transmitter of claim 3 wherein said microdisk is heterogeneously attached to said integration platform.
5. The reconfigurable laser transmitter of claim 1 wherein said fixed grating is fabricated in a material having a temperature sensitivity less than or equal to 0.1 Å/°C.
6. The reconfigurable laser transmitter of claim 1 wherein said tunable microresonator is electrically tuned.

7. The reconfigurable laser transmitter of claim 1 wherein said tunable microresonator is vernier tuned.
8. The reconfigurable laser transmitter of claim 1 wherein said fixed grating is a sampled grating.
9. The reconfigurable laser transmitter of claim 1 wherein the gain element is a laser and wherein the fixed grating is a sample grating having Bragg reflection peaks for locking the laser thereto.
10. A method for reconfiguring a wavelength of a laser comprising the steps of:

    providing an integration platform formed of silicon;

    coupling a tunable microresonator having a passband to a fixed grating having a plurality of reflection peaks via a silica waveguide in said integration platform, said silica waveguide including a UV-induced sampled grating;

    heterogeneously mounting the tunable microresonator on said integration platform, said tunable microresonator being formed of a material different than the silica waveguide; and

    tuning said tunable microresonator such that the passband of said tunable microresonator is aligned with one of said plurality of reflection peaks of said fixed grating.

11. The method of claim 10 wherein said tunable microresonator is a microdisk or a Fabry-Perot etalon.

12. Cancelled.
13. The method of claim 10 where said step of tuning is done electrically.

14. The method of claim 10 wherein said fixed grating is fabricated in a material having a temperature sensitivity less than or equal to 0.1 Å/°C.
15. The method of claim 10 wherein said fixed grating is a sampled grating.
16. The method of claim 10 wherein said step of tuning is vernier tuning.
17. A method of configuring a transmitter to transmit one of a plurality of wavelengths, said method comprising the steps of:

    passing a spectrum of light from a gain element into a tunable Fabry-Perot etalon or microdisk microresonator;

    selecting a first portion of said spectrum of light to be transmitted by said transmitter; and

    electrically tuning said tunable Fabry-Perot etalon or microdisk microresonator, wherein a second portion of said spectrum of light is to be transmitted by said transmitter to a sampled grating fabricated in a silica waveguide for reflection back to said gain element.
18. Cancelled.
19. The method of claim 17 wherein said step of electrically tuning further comprises the step of vernier tuning.
20. The method of claim 17 wherein the step of selecting a first portion further comprises the step of coupling a fixed optical grating to said tunable Fabry-Perot etalon or microdisk microresonator.
21. The method of claim 20 wherein said fixed optical grating is a UV-induced sampled grating.
22. The method of claim 17 wherein the step of selecting a first portion further comprises the step of coupling a fixed

optical-resonator filter to said tunable Fabry-Perot etalon or microdisk microresonator.

23. The method of claim 17 wherein said spectrum of light corresponds to predetermined frequencies set according to an international standard.

24. Claim allowable.

25. Claim allowable.

26. The method of claim 17 further including:

forming at least another silica waveguide in a silicon integration platform, and

forming the tunable Fabry-Perot etalon or microdisk microresonator from III-V semiconductor material on or in said silicon integration platform so that the Fabry-Perot etalon or microdisk microresonator is optically coupled with said at least two silica waveguides.

27. Claim allowable.

28. Claim allowable.

29. A method of configuring a transmitter to transmit one of a plurality of wavelengths, said method comprising the steps of:

passing a spectrum of light from a group III-V gain element into a tunable group III-V Fabry-Perot etalon;

selecting a first portion of said spectrum of light to be transmitted by said transmitter; and

electrically tuning said tunable Fabry-Perot etalon, wherein a second portion of said spectrum of light is to be transmitted by said transmitter to a sampled grating fabricated in a silica waveguide for reflection back to said gain element.

30. Claim allowable.

31. The reconfigurable laser transmitter of claim 1 wherein the gain element provides an optical signal at its optical output, wherein the fixed grating generates a sequence of Bragg reflectivity peaks in the optical signal and wherein a passband of the tunable microresonator selects one of the peaks in said sequence of Bragg reflectivity peaks.

32. The reconfigurable laser transmitter of claim 1 wherein the gain element is a semiconductor optical amplifier.

33. A method of configuring a transmitter to transmit one of a plurality of wavelengths, said method comprising the steps of:

passing a spectrum of light from a gain element into a tunable Fabry-Perot etalon;

selecting a first portion of said spectrum of light to be transmitted by said transmitter; and

electrically tuning said tunable Fabry-Perot etalon, wherein a second portion of said spectrum of light is transmitted to a sampled grating fabricated in a silica waveguide for reflection back to said gain element.

34. The method of claim 33 wherein said sampled grating has a sequence of Bragg reflectivity peaks and wherein a passband of the tunable Fabry-Perot etalon selects one of the peaks in said sequence of Bragg reflectivity peaks.

35. The method of claim 33 wherein the gain element is a semiconductor optical amplifier.

36. The method of claim 29 wherein said sampled grating has a sequence of Bragg reflectivity peaks and wherein a passband of the tunable Fabry-Perot etalon selects one of the peaks in said sequence of Bragg reflectivity peaks.

37. The method of claim 29 wherein the gain element is a semiconductor optical amplifier.

38. The method of claim 17 wherein said sampled grating has a sequence of Bragg reflectivity peaks and wherein a passband of the tunable Fabry-Perot etalon selects one of the peaks in said sequence of Bragg reflectivity peaks.

39. The method of claim 17 wherein the gain element is a semiconductor optical amplifier.

No evidence is being submitted

No copies of decisions rendered in related proceedings are being submitted.